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ABSTRACT

The purpose of this monograph is to discuss the minicourse as a model for the continuing education of teachers. The first section defines the minicourse and describes its evolution. The second section discusses the characteristics of the minicourses at the Centre for Advancement of Teaching (CAT) at Macquarie University, New South Wales, Australia. These characteristics include: (1) meeting a need, (2) specific objectives, (3) self contained, (4) short duration, (5) skills orientation, (6) wide participation, (7) varied learning activities and diverse ways of introducing ideas, (8) emphasis on creative activity, (9) evaluation, and (10) follow-up. In the next section a listing of the current CAT minicourses is presented. The following section describes the steps in the development of a minicourse. It states that a minicourse is essentially a self-contained minicurriculum, and therefore the steps in production are essentially a miniaturized version of the classical steps of curriculum development. The final section details the problems of evaluating the effectiveness of a minicourse, and presents a model to use in the evaluation. A list of references completes this document. (RC)

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Nº 13

THE MINI-COURSE AS A MODEL FOR THE CONTINUING EDUCATION OF TEACHERS

SP 009 630

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MACQUARIE UNIVERSITY
CENTRE FOR ADVANCEMENT OF TEACHING

THE MINI-COURSE AS A MODEL FOR THE CONTINUING EDUCATION OF TEACHERS

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THE MINI-COURSE AS A MODEL FOR THE CONTINUING EDUCATION OF TEACHERS

The concept of the minicourse arose in the United States in the last decade as an extension of the audio-tutorial (Postlethwait, Novak and Murray, 1969; Meyer, 1972). In an audio-tutorial the content of a given course is broken into units or modules containing semi-programmed and self-paced learning materials co-ordinated by audio-tape recordings. A module has been defined as a self-contained, independent, self-paced unit of work programmed to a set of objectives (Postlethwait and Mercer, 1974). The characteristics of modules have been described and discussed (Creager and Murray, 1971). Creager and Murray have set out the components of a typical module as listed below:

1. Statement of purpose
2. Desirable prerequisite skills
3. Instructional objectives
4. Diagnostic pre-test
5. Implementers for the module (i.e. equipment and supplies)
6. The modular program
7. Related experiences
8. Evaluation post-test
9. Assessment of the module.

The minicourse has grown out of the module concept by freeing modules from the restrictions of self-pacing. While keeping within the constraints of a short time span, minicourses maximise the variety of strategies and media to ensure achievement of highly specific objectives. They utilise those strategies and media most appropriate for the achievment of their stated objectives and may or may not be individualised and self-pacing.

The following table traces the transition from conventional courses to the *audio-tutorials* of the mid-1960's, the *modules* of the late 1960's and early 1970's, and finally to *minicourses* (mid-19[illegible]'s).

STAGES IN THE EVOLUTION OF THE MINICOURSE CONCEPT

1. Conventional Semester Course - Pre-1960

   A semester program of lectures, workshops and tutorials.

2. Conventional Audio-tutorial Courses - Early and Mid-1960's

   Lectures, workshops and tutorials of a conventional program fused into a series of audio-tutorials involving self-paced, semi-programmed learning, co-ordinated by audio-tape and designed to achieve specified behavioural objectives.

3. Sequential Modular Audio-tutorial Courses - Late 1960's

   Recognition that each week of a semester course designed as part of an audio-tutorial course had specifically defined objectives relatively independent of objectives to be achieved in other weeks. There was, however, some gain from week to week, each weekly unit cumulatively contributing to broad aims of the course as a whole. This led to the idea that each week's work was a separate modular entity that was a step towards the next module in the sequence.

4. Non-Sequential Modular Audio-tutorial Courses - Late 1960's and Early 1970's

   The next stage was to develop each unit or module so that it was virtually independent of each other unit in the course. The logical extension of this idea was to allow students to sequence the modules in ways that suited their backgrounds and interests. A further modification was to provide additional modules to allow students to select those of special interest and relevance and to avoid others, while still satisfying course requirements with regard to hours of attendance. Precise objectives achieved would vary from student to student according to selection and sequencing of modules.

5. Independent Modules - Early 1970's

Where credit points of a conventional course were no longer of significance or where they could be gained by very flexible combinations of small units, it was a logical development to offer each module separately as a complete entity in itself and to allow students to take any percentage of modules offered within a particular program. At this point the more conventional audio-tutorial format was relaxed and modules took on a variety of formats from simple printed materials to highly complex multi-media systems. In each case, however, emphasis was on a self-paced semi-programmed mode of learning.

6. Minicourses - Mid-1970's

The final step in this evolution was a rethinking about the nature of each independent unit to still further liberalise its format. It was recognised that with careful planning entirely self-contained courses could be presented in modular form and that each module could have value in its own right. It was further recognised that self-paced learning was only one useful strategy and that at times work in groups of various sizes from two to forty had educational merit and could operate within a modular format. At this stage the true "miniature" *course* emerged, involving say a few days or even only a few hours of learning activity, and the minicourse was finally evolved.

Unfortunately the literature in this area is confused and the terms "module" and "minicourse" are often used synonymously. In addition other terms such as *modular course*, *audio-tutorial packet*, *concepts pack*, *unit box* and *learning activity package* have also been used. In most cases these terms have referred to some form of Stage 5 above - the independent self-paced module. This type of program has been thoroughly described elsewhere (see especially Barrow and Lakus, 1973; Batoff, 1974; Murray, 1971; Postlethwait and Russell, 1971; and Verma, 1975).

To avoid further confusion in this regard the present author suggests that only two terms be used to encompass the above terminology, namely module and minicourse as defined below.

Module:	a self-contained semi-programmed and self-paced unit of work designed to achieve highly specific objectives in a short span of time, usually of a few days or less.
Minicourse:	a self-contained flexible learning program for individuals or groups usually involving a variety of media and strategies and with specific objectives achievable in a short span of time usually of a few days or less.

The stress on self-pacing in the definition of a module is consistent with the historical origin of the module in the audio-tutorial. The stress on "unit" of work is consistent with the idea that a module is an exemplar of a series of activities based on similar principles. "Course" in the term "minicourse" on the other hand implies a break away from the rigidity of the self-paced format and allows course development to be as free as for any other type of course except for the constraints imposed by a severely limited time span, and the implications that this has for effective course design.

It is perhaps not insignificant that the first minicourses to meet the requirements of this definition were developed in inservice programs for teachers where there is maximum flexibility and little pressure from the need to accumulate credit points. (See especially Borg, 1973; Borg, Langer and Kelley, 1972; Mowrer, 1973; and Turney, 1973.)

In Australia under the stimulus of the Schools Commission (Karmel, 1973) there has been an extension of inservice

programs for teachers. There are attempts to redefine the role of inservice education and to diversify the types of activities available for teachers to achieve professional growth and development (Meyer, 1974). Minicourses are one of the newer approaches being introduced. In New South Wales the first institutions to adopt this model for inservice educators was the Centre for Advancement of Teaching (C.A.T.) at Macquarie University (Meyer, 1975).

Since the first experimental minicourses introduced by C.A.T. in 1972, there has been a growing interest in this compact and practicable format for developing and renewing teaching skills. The Educational Resources Association of New South Wales has made extensive use of minicourses to train teachers in the selection and use of audio-visual equipment and in the production of non-print resources (Meyer, 1975). More recently the Division of Services of the New South Wales Department of Education has devised a series of minicourses on aspects of various curricula, notably Science for the School Certificate (New South Wales Department of Education, 1974). The characteristics of minicourses offered by C.A.T. are described and discussed below.

TEN CHARACTERISTICS OF A C.A.T. MINICOURSE

1. Meeting a Need

Each course is designed to meet a definite need. This often arises from one or more of the following situations.

i. The introduction of a new technology such as closed circuit television, an audio network or an overhead projectual system creates a demand for assistance in the use of the new resource.

ii. Those new to teaching at a particular level (e.g. when transferring from infants teaching to lecturing in a program of teacher education) frequently request some help in the necessary re-orientation.

iii. Official changes in syllabuses or curricula usually bring highly specific problems that can often be solved by training in specific skills provided by a particular minicourse.

iv. Policy changes of an institution or school system may require new skills in small group work, assessment, team teaching, or open plan teaching. New skills may be required for the selection and use of resources or for converting a school book collection into a media resource centre.

v. With an increasing interest in decentralised programs, teachers at all levels are becoming more interested in producing their own learning resources and are seeking help in producing slide sets, movies, audio and video programs, and other materials.

2. Specific Objectives

Since time for each course is limited to only eight hours, the statement of course objectives is critical. General objectives and specific behavioural objectives must be clearly stated and must be achievable in the limited time available. The objectives for C.A.T. Minicourse No. 18 on making and using 35mm slides, for example, do not include acquisition of advanced photographic skills and relate mainly to the conceptual development of the concepts to be conveyed by the slide set. The objectives of this particular minicourse are given below, the specific objectives clearly listing the skills to be acquired.

MINICOURSE No. 18

Making and Using 35mm Slides for University and College Classes

General Objectives

1. To increase awareness of the need to develop a production plan for a set of 35mm slides.

2. To provide information on the steps in the production of a slide set.

3. To develop appropriate skills for specifying the objectives and content of a slide set.

4. To develop basic skills for producing a slide set.

5. To appreciate the importance of effective evaluation of slide materials.

Specific Objectives

At the conclusion of this minicourse, those attending will be able to -

1. Prepare general specifications for a set of 35mm slides.

2. Use a planning board to prepare detailed specifications for individual slides and for sequencing slides.

3. Prepare instructions for artists and photographers involved in the production of a slide set.

4. Supervise first drafts of artwork for a selected slide.

5. Use the Kodak Ektagraphic Visual Maker to copy illustrations from books.

6. Prepare the script for an audio commentary for selected slides.

7. Make an audio recording commenting on selected slides.

8. Evaluate the effectiveness of slide materials.

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3. Self Contained

This aspect has both its weakness and its strength. The obvious weakness is that no single minicourse can

build on concepts or skills developed in other courses. This lack of cumulative gain makes the format unsuitable for the achievement of certain types of objectives, such as establishing elaborate learning hierarchies. On the other hand the separate identity of each course makes it possible for a teacher to select only those courses immediately relevant to his needs and to sequence them in any preferred order. An important aspect is that those attending any given course are confident that they will not be disadvantaged by not attending other courses because training always starts from first principles.

4. Short Duration

A minicourse by definition should involve no more than one day of intensive learning effort - at C.A.T. we have found the optimum period to be eight hours broken into two evenings of four hours each. With careful structuring involving much pre-planning, a great deal can be achieved in this time - more, in fact, than in a program of, say, one hour per week for eight weeks. This is because one activity can grade into another and progress is rapid. Teachers welcome this type of program because it need not involve more than two evenings and because it does not interfere significantly with school work or with precious and hard-won time for personal and family life.

5. Skills Orientation

The short duration and lack of any defined cumulative gain from course to course makes the minicourse format especially suitable for acquiring certain professional teaching skills. These include such highly specific skills as encouraging students to participate in small group work; classroom questioning; production of transparencies for the overhead projector; or designing an assessment program. Teachers especially welcome this specific "skills" approach, as they can take from the series just those elements required to close gaps in their training or background or to meet specific needs that may arise from time to time. The courses therefore are usually "fail-safe" in that they can hardly be anything but relevant to the needs of those attending.

6. Wide Participation

An important feature of the C.A.T. minicourses is attendance by participants with widely differing backgrounds. At present, we have two series of courses: Series I for teachers in tertiary institutions, and Series II for teachers in primary and secondary schools. The tertiary series is attended by staff from universities; teacher education institutions and other types of colleges of advanced education; from technical colleges; and from training units of industry and the armed services. All types of disciplines are represented, from art to zoology. The series for school teachers is attended by staff from preschool to secondary school and represents all types of specialty, including remedial education and counselling. The fact that any one course can attract such a wide representation is indicative of its stress on centrally important and widely applicable professional skills. The broad representation is vitally important in that problems can often be solved by comparing experience from different settings. The meeting together of teachers from institutions with very different backgrounds and purposes is usually greatly appreciated by those attending.

7. Varied Learning Activities and Diverse Ways of Introducing Ideas

A key feature of a minicourse is the recognition by course planners that formal courses consisting mainly of passive listening to lectures are not acceptable to the majority of teachers. Interest depends on activity and on the recognition that participants have much if not more to contribute than to receive. Each course is structured, therefore, to provide opportunity for input by participants based on their background and experience. Within each course, a wide variety of strategies is employed, each course using those strategies most appropriate for the achievement of its objectives. Each course is limited to forty participants, and a change of pace is introduced by grouping and regrouping into various size units for different purposes (Haysom and Sutton, 1974). The following table lists some of the learning situations that have been found to be appropriate for C.A.T. minicourses.

LIST OF LEARNING EXPERIENCES APPROPRIATE FOR MINICOURSES

Study of Materials Sent Before Course Begins

- Succinct printed notes
- Short booklets - heavily illustrated or semi-programmed
- Short audio programs
- Simple pre-assignments

Lecturettes

- Expository
- Problem Solving
- Motivational

Group Work

- "Buzz" groups or "horseshoe" groups
- Document analysis groups
- Syndicates
- Brainstorming sessions
- Self-assessing groups
- Modified T-groups
- Case study groups

Displays

- of resources
- of techniques
- of the products of group work

Workshops

- Analytical - examining concepts, equipment, resources
- Synthetic - building ideas, making resources, designing tests, developing teaching programs

Individualised Instruction

Programmed instruction - limited use

Audio-tutorial - limited use

Excursions and Visits

Visits to locations on campus - limited use

Short excursions to field sites or institutions - very limited use

Use of Simulation Methods

Role playing

"In-basket" methods

Simulation games

Evaluation Methods

Self-evaluation techniques

Methods of evaluating ideas and resources

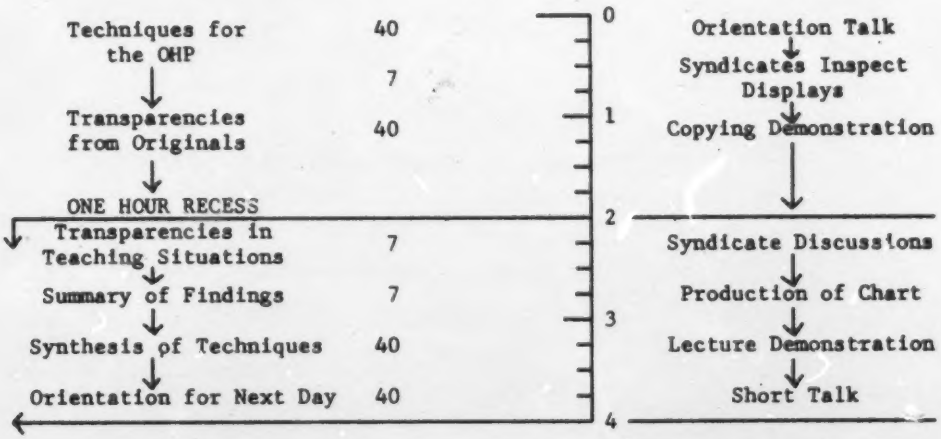
Almost all C.A.T. minicourses present information through a variety of media, and of these media the participants themselves are of paramount significance since contributions based on personal background and experience are an essential feature. This input is reinforced and enhanced by using video-replay techniques perhaps involving some modified form of micro-teaching. Further input is from printed materials; slides; movie films; video programs; slide-tape presentations; audio-programs; photographs; models; working displays of equipment and apparatus; and other devices including "props" for various simulation games.

The wide variety of strategies and media implies a great deal of structuring, as is shown by the following typical program - in this case for Minicourse No. 17 on the "Overhead Projector in Tertiary Education".

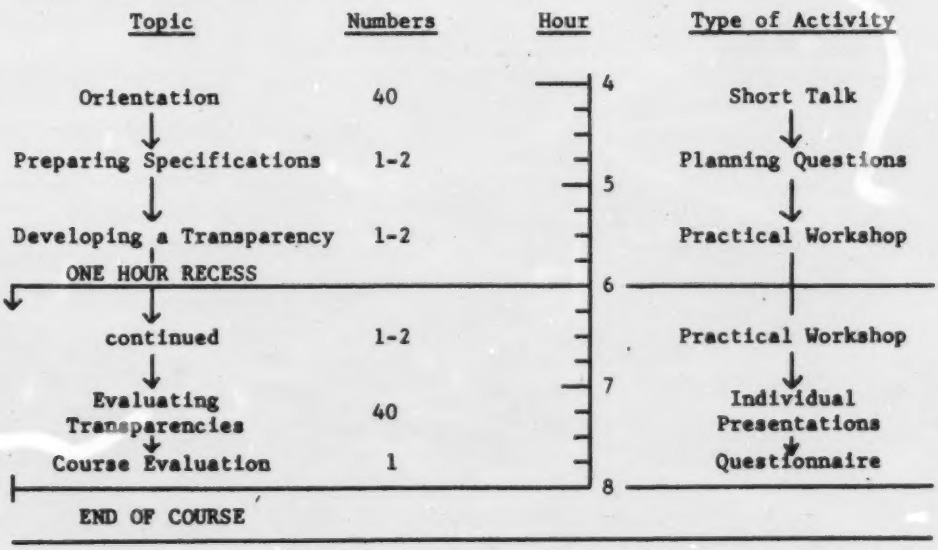
PROGRAM OF A TYPICAL C.A.T. MINI-COURSE

Nº 17 : 'The Overhead Projector in Tertiary Education'

PROGRAM HOURS 1 TO 4



PROGRAM HOURS 5 TO 8



8. Emphasis on Creative Activity

While a high degree of structuring is necessary and may possibly be regarded as a weakness in the minicourse format, it does allow compression of extended practical experience. and of numerous concepts into the eight hours of the course. The structuring is accepted by participants for that reason. It is also possible to build in "open ended" activities within the structure that satisfy the independent participant who may wish to pursue his own version of the objectives. While each course is carefully structured, there is always opportunity for creative activity. In fact, the entire emphasis is on activity, usually through individual or group work. The activity, however, is not only devised to satisfy learning theory, but to provide training in an operational skill and, on occasion, to allow those attending to produce something of direct use, such as an objective test, a slide set, overhead projectual, or script for an audio program. Participants are thus frequently challenged to produce something of creative value and of practical use in their current program of teaching.

9. Evaluation

In order for minicourse organisers to modify each program and so make it more effective in meeting the needs of participants, some feedback is sought. This is achieved by requiring those present to spend five or ten minutes answering a short standardised questionnaire. This asks the following questions:

Do you feel that you have benefited professionally from this minicourse? In what ways?

Do you feel that your teaching will be influenced by your participation in this minicourse? In what ways?

What aspects of this minicourse did you find most helpful?

Have you any suggestions for improving this minicourse?

While it is envisaged that such a superficial "on-the-spot" technique cannot be expected to provide much evidence about the effectiveness of the course, it has helped in the restructuring and refinement of certain aspects of the program.

10. Follow-up

A follow-up consultancy service is available for all participants who may need to seek further help and advice on any aspect arising from any minicourse. Stress is placed on trying to help solve problems associated with applying new understandings, skills, and values to practical teaching situations.

THE CURRENT PROGRAM OF C.A.T. MINI-COURSES (JUNE 1975)

Each year, the program of minicourses changes with changing needs. However, more popular courses are repeated while ever there is a demand. This aspect of the minicourse program is a cogent argument in its favour. Minicourses form a totally flexible program that can be revised piecemeal. In addition, because each course is a self-contained module, it can be "stored", "transferred" to other institutions, or "repeated" with minimum difficulty.

Minicourses have been offered by C.A.T. only since 1972, and the tertiary series was introduced for the first time in 1974. There are, however, already over 30 minicourses in the current repertoire. These are listed below.

TITLES OF C.A.T. MINI-COURSES (JUNE 1975)

Series I for Tertiary Education		Series II for Primary and Secondary School Teachers	
14	Behavioural Objectives in Tertiary Teaching	01	Laboratory Techniques
15	Small Group Teaching at Tertiary Level	02	A Multi-Media Approach to Selected Topics in Junior Science

16 Lecturing Techniques for University and College

17 The Overhead Projector in Tertiary Teaching

18 Making and Using 35mm Slides for University and College Classes

19 Audio Tutorial Techniques for University and College

20 Making Effective Use of TV in University and College Classes

21 Open Space Teaching at Tertiary Level

22 Developing an Assessment Program

23 Assessment of Teaching

24 Team Teaching at Tertiary Level

25 Item Writing for Objective Examination.

03 Field Course in the Interpretation of Sedimentary Rocks

04 Assessment and Evaluation at School Certificate Level

05 Using Media in an Enquiry Approach to Senior Secondary Geology

06 Making Educational Slide Sets

07 Making and Using Overhead Projector Transparencies

08 Producing Audio Tapes for Classroom and Library

09 Curriculum Change in Primary Schools

10 A Seminar for Teachers of Fitting and Machining Courses

11 Classroom Observation

12 The Microteaching Approach to Teacher Education

13 Evaluating Classroom Questioning Skills

30 Development of Audio Visual Resources for Primary School Libraries

31 Simple TV Techniques for Schools

32 Training for Leadership in Inservice Activities

33 Producing 8mm Film for Schools

34 Developing Resource Modules for Teacher-Directed Inservice Activities

The program is clearly successful in terms of demand by the educational community. Almost all courses have been filled, and many have waiting lists. Demand, however, is not a sufficient measure of effectiveness. As C.A.T. will, of necessity, be giving much more of its future resources to this type of program, the question arises - how should the effectiveness of the program be evaluated? This problem is discussed in the last section of the paper, but first some account follows of the steps in the development of a C.A.T. minicourse.

STEPS IN THE DEVELOPMENT OF A MINI-COURSE

A minicourse is essentially a self-contained mini-curriculum, and therefore the steps in production are essentially a miniaturised version of the classical steps of curriculum development. Each step, however, has special features determined by the constraints of the minicourse format. These are tabulated below.

Steps in the Development of a Minicourse

Classical Step in Curriculum Development	Special Aspects of Minicourse Development
1. Determination of need	- Wherever possible, the need should be related to increasing alternatives available to teachers. It should be possible to see that meeting the need will improve the quality of both teaching and learning. In general the need should be related to the development of specific professional skills.
2. Formulation of aim	- The aim must be very specific and clearly relate to the need.

3. Formulation of objectives	- The objectives must be expressed in both general and specific terms and be behaviourally orientated. They must be achievable in the time available - for a C.A.T. minicourse in no more than eight hours.
4. Survey of available resources (including media) and of possible strategies	- Because of the high degree of compression, the resources and strategies must be as varied as possible to achieve maximum interest and to maintain a rapid pace. They must also be practicable in relation to the strictly limited time available.
5. Selection and sequencing of strategies and resources (including media)	- Considerable care must be taken to select those strategies and media that are most appropriate for the objectives. In a minicourse there is no room for error in this regard, as every minute is needed to achieve the objectives and cannot be spent on non-productive sequences.
6. Development of learning materials	- Great care must be taken to ensure that instructions are clear and that the activities can be reasonably achieved in the time available.
7. First trialling	- Trialling in the usual sense of the term is usually not possible in the minicourse situation because the "students" come voluntarily and from widely varying institutions, and each "trial" would be with a different group. The first time the course is presented is its "trial".
8. Formative evaluation (at each step 2 to 7)	- This can be achieved only by reflective evaluation at all stages of development and by repeating the course, changing aspects as feedback is directly obtained from participants.
9. Modification of objectives and strategies	- It is necessary to repeat a minicourse sufficiently often to locate weaknesses and to modify aspects

	before any "final" version can be produced.
10. Further development of curriculum including "final" versions of learning materials	- This is unlikely to be easily achieved until the course has been repeated several times. Materials must remain in "trial" form for at least two years. The modular nature of the program, however, requires a stable format as soon as all necessary feedback has been obtained.
11. Summative evaluation	- This is difficult because the ultimate change to be evaluated is in the quality of pupils' learning. This involves two levels of multi-variant analysis. The problem of evaluation is discussed in some detail in the next section.

PROBLEMS OF EVALUATING THE EFFECTIVENESS OF A MINI-COURSE

As previously discussed, a minicourse can be considered to be a mini-curriculum. At least in theory it should therefore be capable of evaluation in much the same way as a curriculum for schools is evaluated. There are, however, special problems. In the first place formative evaluation of trial versions of a minicourse is more difficult because each course is only an optional unit in a variable program involving other minicourses. Each teacher, therefore, has experienced a different "set" of minicourses. While each course is "self contained" it would be expected that there would be some influence of one on another. Secondly, school curricula are concerned with a direct product, namely changes in the behaviour of pupils consistent with the objectives of the school curriculum. In the case of a minicourse, the product is indirect in that we must first bring about changes in teachers. These are in-

effective unless they bring about desirable changes in the learning of children. In such cases it is very difficult to separate out and evaluate each indirect factor including minicourse training that has influenced pupils' learning. This raises the third difficulty. It is not possible to formulate useful objectives for a minicourse for teachers in terms of behavioural changes in *pupils* because causal relation between any change of behaviour in the teacher and a corresponding "one-for-one" change in behaviour of a pupil would be impossible to establish. If we cannot formulate such objectives we cannot evaluate the program in terms of pupil behaviour. We must be satisfied with evaluation of an intermediate product rather than the final product. A fourth difficulty lies in the fact that because each minicourse is part of a complex set of highly variable inservice activities experienced by teachers in different schools in different areas, it is difficult to establish unequivocally just which inservice experience, if any, has altered the behaviour of a given teacher. In summary, the "curriculum" of the continuing education of a teacher is much more varied and less controlled than the curriculum of a school pupil and the real product of the "curriculum", namely changed behaviour of pupils, is difficult to measure because it is indirect.

Something nevertheless can be done. While the classical methods of curriculum evaluation help in some respects, they do have to be modified to fit the particular case of the minicourse.

The following discussion sets out a possible model.

The evaluation of any activity or unit within a program of continuing education of teachers might be considered at five levels.

Level I - Evaluation of inherent features or characteristics of the activity.

Level II - Evaluation of the effectiveness of the activity as a process.

Level III - Evaluation of the effectiveness of an intermediate product of the activity - namely of the changes in behaviour of teachers resulting from their having experienced the inservice activity.

Level IV - Evaluation of the effectiveness of the final product of the activity - namely of the changes in the learning achievements of pupils resulting from changes in the behaviour of teachers that have come about from their having experienced the inservice activity.

Level V - Evaluation of the effectiveness of an overall inservice program for a total educational system and of the contribution of each separate inservice activity to that total system.

These five levels of evaluation apply to the minicourse and the following discussion briefly considers each level.

Level I - Inherent Characteristics

This is relatively straightforward as it is possible to establish objective criteria for evaluating the internal characteristics of a given minicourse. The following criteria are suggested as a useful starting point.

1. Does the course meet a real need related to the professional development of teachers?

2. Are the objectives suitable and appropriate - will they satisfy the determined need?

3. Have the objectives been expressed in clear, unambiguous behavioural terms?

4. Can the objectives be realistically achieved in the time (say eight hours) available to participants?

5. Is the level of treatment suitable for the category of teachers concerned?

6. Are the learning activities arranged in a logical sequence that holds together as a coherent whole?

7. Are all activities practicable in all reasonable situations likely to be encountered by

those implementing the course?

8. Are the strategies chosen appropriate for the objectives to be achieved?

9. Is the relationship between each activity, and the media used for that activity, always appropriate?

10. Are the activities and groupings of participants sufficiently varied to maintain maximum interest?

11. Is the relative timing of the various activities satisfactory, e.g., is the rate of change of activity (a) practicable, and (b) paced so as to maintain maximum interest and involvement?

12. Is there sufficient emphasis on activity and participation?

13. Is there provision for obtaining some kind of feedback or on-the-spot evaluation?

14. Is there some provision for reasonable follow-up?

15. Is the organisation of the minicourse in the form of a coherent module that is portable in the sense of easy "storage", "repetition" or "transfer" from institution to institution?

A 4-point rating scale on each criteria from "4 - Very satisfactory" to "1 - Generally unsatisfactory" can be used to establish a useful evaluative profile for a given minicourse. Such evaluation of course begs the central question of whether or not the objectives, if achieved, will bring about desirable changes in the behaviour of teachers, which in turn will effect desirable changes in the learning achievements of pupils.

Level II - Effectiveness of the Minicourse at the Level of Process

In this case evaluation is mainly in terms of effective-

ness of the administration. Answers can be obtained to questions such as the following.

1. How widely are the courses known by teachers who could be reasonably expected to attend?

2. What is the demand for each minicourse?

3. What numbers of teachers of various categories have attended each minicourse?

4. What are the attitudes of teachers to such questions as:

   (i) access to the minicourses

   (ii) quality of training

   (iii) relevance, suitability and level.

5. What are the attitudes of school principals, inspectors and other administrators to the minicourses?

6. What is the cost of each minicourse?

7. What is the extent of parental knowledge of and community reaction to the program?

These and similar questions can provide valuable data but also side-step the main question of product effectiveness.

Level III - Evaluation of the Effectiveness of a Minicourse in Changing the Behaviour of a Teacher

While there are special difficulties in isolating the causes of change in the behaviour of a teacher undertaking a multiplicity of inservice activities, Level III evaluation can be validly undertaken provided the objectives of the minicourse are (i) intended to develop a skill that is totally lacking or previously developed to only a low level, and (ii) not concurrently offered in any other way reasonably available to the teachers concerned. Provided these criteria are met then standard methods of curriculum evaluation such as questionnaries, interviews and observations of teaching

behaviour can obtain reliable results. In cases where the objectives are not unique or the skills of participants are already fairly well developed, the only recourse is to rely on the subjective opinions of the teachers concerned. This, however, should not be under-rated as a source of evidence. Experienced teachers are usually very sensitive to such matters and could be reasonably expected to rank those factors influencing a change in their teaching behaviour with some degree of validity.

Level III evaluates only an intermediate product. Obviously, however, this intermediate product is important because changes in the behaviour of teachers can be significant factors in changing the behaviour of pupils.

Level IV - Evaluation of the Effectiveness of a Minicourse in Improving the Quality of Pupils' Learning through Changing the Behaviour of Teachers

The multivariant nature of factors involved both at the level of the pupil and the level of the teacher, would make it difficult to undertake more than the following:

1. Collection of data about the changes in achievement of pupils over a given period.

2. Collection of data on the changes in behaviour of teachers of those pupils over the same period.

3. Collection of data on the objectives of any inservice experiences, including attendance at minicourses, undertaken by teachers of those pupils over the same period.

4. Collection of anecdotal evidence and statements of opinions from school principals, pupils and colleagues of the teachers and from the teachers themselves about any causal relationships that may exist.

This would be a major undertaking with uncertain results, but may nevertheless be worthwhile in an attempt to establish the value of the minicourse as a general model.

Level V - Evaluation of Minicourses as Contributing to an Overall Program of Continuing Education

The effectiveness of an overall inservice or continuing education program for teachers is difficult to assess because such a system is open-ended and can never be expected to terminate. Nevertheless, it *is* a system and is thus theoretically subject to the methods of evaluating any large system. Such an evaluation would involve collecting massive evidence about the objectives, strategies, constraints and outcomes of the total inservice program for an entire school system (e.g. for the New South Wales State system); identifying the network of sub-systems and their inter-relationships, and using mainly "illuminative" methods of evaluation (Parlett and King, 1971) to obtain an informed impression of the effectiveness of the total system and of each component of the system, including the role of the minicourses. So far this task has not been undertaken, to my knowledge, anywhere in the world.

In C.A.T. so far, we have been gathering data only at Levels I, II and III. While the evidence is meagre, the results are sufficiently encouraging to suggest that the minicourses are making some impact. Certainly they are popular and well liked by teachers and they seem to be reasonably effective in improving specific teaching skills. We plan to expand the program and to continue to further investigate its effectiveness.

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